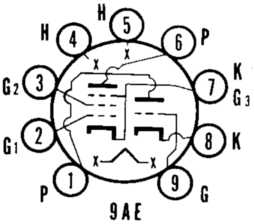


SYLVANIA TYPE 7687

LO-NOISE AUDIO
TRIODE-PENTODE



MECHANICAL DATA

Bulb	T-6½
Base	E9-1, Miniature Button 9-Pin
Outline	6-3
Basing	9AE
Cathode	Coated Unipotential
Mounting Position	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage[1]	6.3 Volts
Heater Current	500 Ma
Maximum Heater Voltage Range	5.7-6.9 Volts
Heater-Cathode Voltage (Design Maximum Values)	
Heater Negative with Respect to Cathode	
Total D C and Peak	200 Volts Max.
Heater Positive with Respect to Cathode	
D C	100 Volts Max.
Total D C and Peak	200 Volts Max.

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

Triode Section	
Grid to Plate	2.4 μμf
Input: g to (h+Tk+Pk, G3, I.S.)	2.2 μμf
Output: p to (h+Tk+Pk, G3, I.S.)	0.3 μμf
Pentode Section	
Grid No. 1 to Plate	0.15 μμf Max.
Input: g1 to (h+k+g2+g3+I.S.)	7.0 μμf
Output: p to (h+k+g2+g3+I.S.)	2.8 μμf

RATINGS (Design Maximum Values)

	Triode Section	Pentode Section
Plate Voltage	330	330 Volts Max.
Grid No. 2 Supply Voltage	—	330 Volts Max.
Grid No. 2 Voltage	See 6AM8 Rating Chart	
Positive Grid No. 1 Voltage	0	0 Volts Max.
Plate Dissipation	2.4	3.0 Watts Max.
Grid No. 2 Dissipation	—	0.6 Watt Max.
Grid Circuit Resistance		
Fixed Bias	0.5	0.25 Megohm Max.
Cathode Bias	1.0	1.0 Megohm Max.

CHARACTERISTICS AND TYPICAL OPERATION

	Triode Section	Pentode Section
Plate Voltage	215	220 Volts
Grid No. 2 Voltage	—	130 Volts
Grid No. 1 Voltage	−8.5	— Volts
Cathode Bias Resistor	—	62 Ohms
Plate Current	7.5	10 Ma
Grid No. 2 Current	—	3.4 Ma
Transconductance	2500	5800 μmhos
Amplification Factor	18	—
Plate Resistance	.0072	0.5 Megohms
Ec1 for Ib = 10 μa (approx.)	−21	— Volts

EQUIVALENT NOISE AND HUM VOLTAGE
(Referenced to Grid, Average Values)

	Triode Section	Pentode Section
Cathode Resistor (Bypassed 50 μ fd)	7.5[2]	10.5[3] μ Volts RMS
Cathode Resistor (Unbypassed)	8[2]	20[4] μ Volts RMS

NOTES:

1. For parallel heater operation, equipment should be designed so that at normal supply voltage tubes will operate at this value of heater voltage.

2. Measured under the following conditions: Ef = 6.3 Vac; center-tap of heater transformer grounded; Ebb = 250 Vdc; R1 = 0.1 Megohm; Rk = 1500 ohms; Rg = 47,000 ohms; F = 25 to 10,000 cps.
3. Measured under the following conditions: Ef = 6.3 Vac; Center-tap of heater transformer grounded; Ebb = 250 Vdc; R1 = 0.22 Megohm; Ecc2 = 250 Vdc; Rg2 = 1.0 megohms; Cg2 = 0.1 μf; Rk = 1000 ohms; Rg1 = 100,000 ohms; F = 25 to 10,000 cps.

APPLICATION

The Sylvania Type 7687 is a triode-pentode designed primarily for High Fidelity audio applications. The pentode section is particularly suited to preamplifier service while the triode section is intended for use as a phase splitter.

Type 7687 features exceptionally low hum and noise output. Although basings differ, Type 7687 is similar to Type 7199. Type 7687 is an improved low noise version of Type 7199.